Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MEN GLENN CHU and SIBA P. RAY

Appeal No. 2002-1600
Application 09/350,858

HEARD: MARCH 6, 2003

Before KIMLIN, OWENS and PAWLIKOWSKI, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 18-25. Claim 24 was canceled after final rejection. Hence, the claims before us are claims 18-23 and 25.

THE INVENTION

The appellants' claimed invention is directed toward a ceramic dispersoid in metal product. Claim 18 is illustrative:

18. A ceramic dispersoid in metal product, comprising:

(a) a matrix metal of aluminum and

(b) a uniform distribution of finely sized metal carbide particles having an average particle size of less than about 0.3 microns, said finely sized metal carbide particles selected from the group consisting of Sc, Hf, Nb, Mo, and V and said finely sized metal carbide particles formed and dispersed in-situ in said metal matrix.

THE REFERENCE

Nagle et al. (Nagle)	4,915,908	Apr. 10, 1990

THE REJECTIONS

The claims stand rejected as follows: claims 18, 20-23 and 25 under 35 U.S.C. § 102(b) as anticipated by Nagle, and claim 19 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Nagle.

OPINION

We reverse the rejections under 35 U.S.C. § 102(b) and affirm the rejection under 35 U.S.C. § 103. Under the provisions of 37 CFR § 1.196(b) we enter a new ground of rejection of claims 18, 20-23 and 25.

Rejections under 35 U.S.C. § 102(b)

We need to address only claim 18, which is the sole independent claim.

For the appellants' claimed invention to be anticipated, the reference must lead one of ordinary skill in the art to a product which falls within the scope of the claim "without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference." *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972).

The examiner broadly discusses Nagle's method steps (answer, page 3). The examiner, however, does not explain how a product having the characteristics required by the appellants' claim 18 can be obtained from Nagle's disclosure without picking, choosing, and combining various disclosures not directly related to each other by the teachings of that reference. The examiner, therefore, has not carried the burden of establishing a *prima facie* case of anticipation of the appellants' claimed invention over Nagle.

Rejection under 35 U.S.C. § 103

Nagle discloses a ceramic dispersoid in metal product which can be made by dissolving a metal which can be Sc, Hf, Nb, Mo or V, in a solvent/matrix metal which can be aluminum, and adding carbon particles to this solution, which strong agitation, to form, in situ, and disperse, finely divided metal carbide particles in an aluminum matrix (col. 6, lines 37-68; col. 7, lines 53-58; col. 8, lines 57-68; col. 9, lines 6-12, 19-20, 25-26 and 66-67; col. 10, line 4). Nagle teaches that "relatively high loadings of very fine second phase particles produce the finest grained product materials. Typically the grain size of the product of the present invention is in the vicinity of one micron for second phase volume fractions between 5 percent and 15 percent" (col. 14, lines 3-8). However, Nagle also teaches that "the particle size of the precipitated second phase in the matrix may vary from less than about 0.01 microns to about 5 microns or larger" (col. 13, lines 61-65), "[t]he second phase-forming constituents provide the desired volume fraction of submicron particulates when reacted in an appropriate volume of molten metal, molten alloy or molten intermetallic matrix" (col. 5, lines 23-27), "[t]he precipitation of specific particle size second phase may be selectively controlled by proper control

of starting composition, temperature of reaction, and cool-down rate" (col. 14, lines 35-38), "[t]he cool-down period following initiation of the reaction and consumption of the reactive constituents is believed important to achieving very small particle size, and limiting particle growth" (col. 14, lines 39-42), and "[f]or most uses of the composite materials, the size of the second phase particles should be as small as possible" (col. 15, lines 38-40). Also, Nagle exemplifies "titanium diboride particles having very small size, e.g. 0.1 micron" (col. 11, lines 50-51).

Thus, the Nagle disclosure as a whole would have fairly suggested, to one of ordinary skill in the art, a ceramic dispersoid comprised of carbide particles of Sc, Hf, Nb, Mo or V formed and dispersed in situ in an aluminum matrix and having a particle size of less than about 0.3 microns as required by the appellants' claim 18.

The appellants' claim 19 claims the product of claim 18 made by a specified process which is not disclosed by Nagle. The patentability of the invention claimed in such a product-by-process claim is determined based on the product itself, not on

the method of making it. *See In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985) ("If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.").[1] Whether a rejection is under 35 U.S.C. § 102 or § 103, when the appellants' product and that of the prior art appear to be identical or substantially identical, the burden shifts to the appellants to provide evidence that the prior art product does not necessarily or inherently possess the relied-upon characteristics of the appellants' claimed product. *See In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980); *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); *In re Fessmann*, 489 F.2d 742, 745, 180 USPQ 324, 326 (CCPA 1974). The reason is that the Patent and Trademark Office is not able to manufacture and compare products. *See Best*, 562 F.2d at 1255, 195 USPQ at 434; *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). The appellants have not provided such evidence.

[1] Hence, the appellants' argument that "Claim 19 is a product by process requiring a ceramic dispersoid formed by the method of the present invention" is not well taken.

The appellants argue that Nagle adds his Sc, Hf, Nb, Mo or V metal component of the carbide particles as a powder, whereas the appellants provide this metal component as part of the molten composition (brief, page 7). This argument is not persuasive because Nagle teaches that the metal component can be dissolved in the solvent/matrix prior to addition of the carbon component of the carbide particles (col. 6, lines 37-68).

The appellants argue that Nagle does not disclose a uniform cluster-free distribution of no more than two particles attached to one another at a magnification of 500X, and does not disclose various percentages of carbide particles (brief, pages 7 and 9-10). This argument is not convincing because the argued limitations are not in the appellants' claims.

For the above reasons we conclude that the ceramic dispersoid claimed in the appellants' claim 19 would have been obvious to one of ordinary skill in the art over Nagle.

New ground of rejection

Under the provisions of 37 CFR § 1.196(b) we enter the following new ground of rejection.

Claims 18, 20-23 and 25 are rejected under 35 U.S.C. § 103 as being unpatentable over Nagle.

The ceramic dispersoid claimed in the appellants' claims 18 and 21 would have been obvious to one of ordinary skill in the art for the reasons given above in the discussion of the rejection of claim 19 under 35 U.S.C. § 103. Also as discussed above regarding the rejection of claim 19 under 35 U.S.C. § 103, Nagle would have fairly suggested, to one of ordinary skill in the art, a ceramic dispersoid having, as the second phase particles, vanadium carbide as recited in the appellants' claims 20 and 23, scandium carbide as recited in the appellants' claim 22, and molybdenum carbide as recited in the appellants' claim 25.[2]

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[2] In the event of further prosecution, the examiner and the appellants should address on the record 1) whether claim 20, wherein the metal carbide particles can be ZrC particles, is properly dependent from claim 18 wherein "selected from the group consisting of Sc, Hf, Nb, Mo and V" limits the metal carbide particles to carbide particles of those metals. *See Manual of Patent Examining Procedure* § 2111.03 (8th ed. 2001), and 2) whether claim 21, which recites that the matrix metal is aluminum or aluminum alloy, is properly dependent from claim 18 which requires aluminum as a matrix metal.

DECISION

The rejection of claims 18-23 and 25 under 35 U.S.C. § 102(b) over Nagle is reversed. The rejection of claim 19 under 35 U.S.C. § 103 over Nagle is affirmed. A new rejection of claims 18, 20-23 and 25 has been entered under 37 CFR § 1.196(b). In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b) (amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

> (b) Appellant may file a single request for rehearing within two months from the date of the original decision . . . .

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of

rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

> (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .
>
> (2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellants elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART, 37 CFR § 1.196(b)

EDWARD C. KIMLIN
Administrative Patent Judge

TERRY J. OWENS
Administrative Patent Judge

BEVERLY A. PAWLIKOWSKI
Administrative Patent Judge

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